

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763 Lab ID: N00004564 Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

N00004564001

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.: Date/Time Collected:

05/26/2009 09:35

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville **TDEC-DWS**

Billing Code: Send Report To:

327.39-12 **TDEC-DWS**

Agency Invoiced: **Priority Date:**

TDEC-DWS

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	78	mg/L	3.8	10	M Chen	5/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	64	mg/L	0.7	1	P Leathers	5/27/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004564002

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

05/26/2009 09:40

Sampler's Name:

GEOFF KLEIN

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	66	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	61	mg/L	0.7	1	P Leathers	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004564003

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

05/26/2009 10:10

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 **TDEC-DWS**

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	MQL	ANALYZED BY:	DATE			
Total Alkalinity	68	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium	ST: Hardness, Calcium METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	55	mg/L	0.7	1	P Leathers	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004564004

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

05/26/2009 10:15

Sampler's Name:

GEOFF KLEIN

County: **Sample Matrix:** **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To:

TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

Field Determinations

:Ha

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DATI						
Total Alkalinity	64	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	54	mg/L	0.7	1	P Leathers	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



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TDEC-DWS 200 East Race St Knoxville, TN 37763 Lab ID: N00004564 Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Knalytical Supervisor

N00004564001

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

05/26/2009 09:35 **GEOFF KLEIN**

Sampler's Name: County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 **TDEC-DWS**

Agency Invoiced: **Priority Date:**

TDEC-DWS

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufeabu	5/27/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

5/27/2009

S Ufegbu

Conductivity:

Temperature:

pH:

Other:

Flow:

TEST: ICP-MS	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	1.1J	μg/L	0.93	5	A Wilson	5/27/2009
Barium	34	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.30J	μg/L	0.04	1	A Wilson	5/27/2009
Lead	0.89J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	43	μg/L	0.42	1	A Wilson	5/27/2009
Selenium	2.4J	μg/L	1.3	5	A Wilson	5/27/2009
Thallium	0.88J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009

TEST: Mercury	WE	METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Wilson	5/27/2009 *

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004564002

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.: Station No.:

Date/Time Collected: Sampler's Name:

05/26/2009 09:40 **GEOFF KLEIN**

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS 327.39-12

Billing Code: Send Report To: Agency Invoiced:

TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP-MS	ME ⁻	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009
Barium	34	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.090J	μg/L	0.04	1	A Wilson	5/27/2009
Lead	U	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	1.02	μg/L	0.42	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Thallium	0.25J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009

TEST: Mercury	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Wilson	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004564003

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

05/26/2009 10:10 **GEOFF KLEIN**

Sampler's Name: County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009
Barium	36	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	Ú	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.74J	μg/L	0.04	1	A Wilson	5/27/2009
Lead	2.2	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	160	μg/L	0.42	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Thallium	0.15J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	4.1J	μg/L	3.4	5	A Wilson	5/27/2009

TEST: Mercury	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Wilson	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004564004

Project Name:

Sample Description: KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.: **Station No.:**

Date/Time Collected:

05/26/2009 10:15

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix: ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-DWS

Send Report To:

327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

Field Determinations

:Hq

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

CFS

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP-MS	WE.	THOD: EPA 20	0.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009	
Barium	20	μg/L	2.5	5	A Wilson	5/27/2009	
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009	
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009	
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009	
Cobalt	0.090J	μg/L	0.04	1	A Wilson	5/27/2009	
Lead	· U	μg/L	0.10	1	A Wilson	5/27/2009	
Manganese	2	μg/L	0.42	1	A Wilson	5/27/2009	
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009	
Thallium	0.073J	μg/L	0.03	. 1	A Wilson	5/27/2009	
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009	

TEST: Mercury	ME:	THOD: EPA 24	5.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Mercury	U	μg/L	0.029	0.2	A Wilson	5/27/2009		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit